

(12) UK Patent Application (19) GB (11) 2 175 428 A

(43) Application published 26 Nov 1986

(21) Application No 8512328

(22) Date of filing 15 May 1985

(71) Applicant

John Malcolm Bradley,
The Grange Water-Mill, Old Linslade Road, Heath and
Reach, South Bedfordshire

(72) Inventor

John Malcolm Bradley

(74) Agent and/or Address for Service

Page & Co.,
Temple Gate House, Temple Gate, Bristol BS1 6PL

(51) INT CL⁴

G09G 3/20

(52) Domestic classification (Edition H):

G5C A342 A361 A373 HB

(56) Documents cited

GB A 2163282	GB 0266283	US 4353063
GB A 2098374	GB 0223645	US 4325062
GB 1533455	EP A1 0131211	

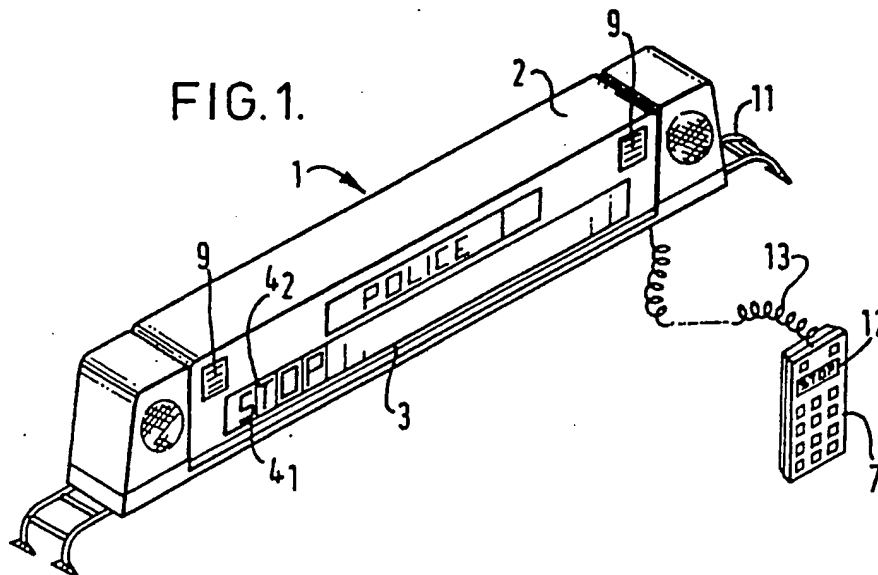
(58) Field of search

G5C

Selected US specifications from IPC sub-classes G09F
G09G

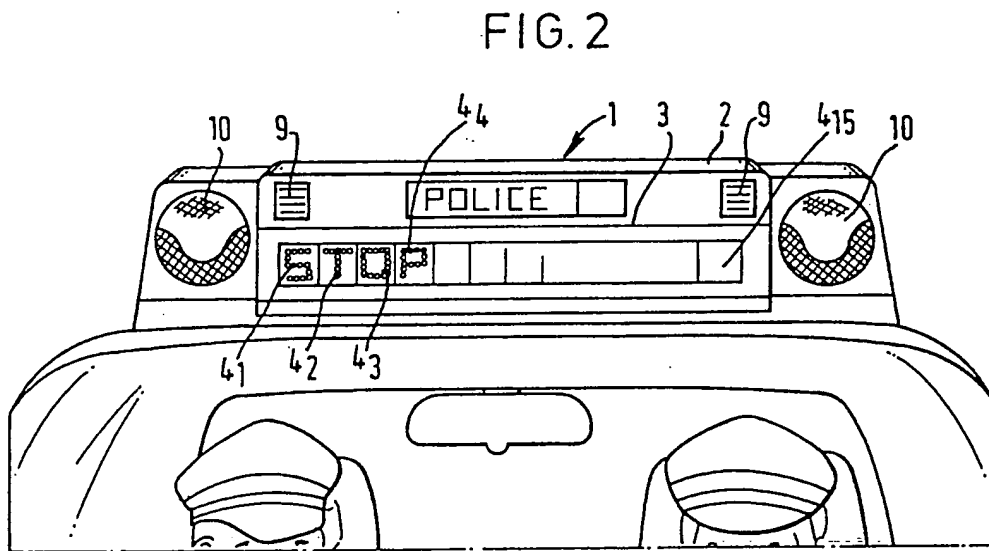
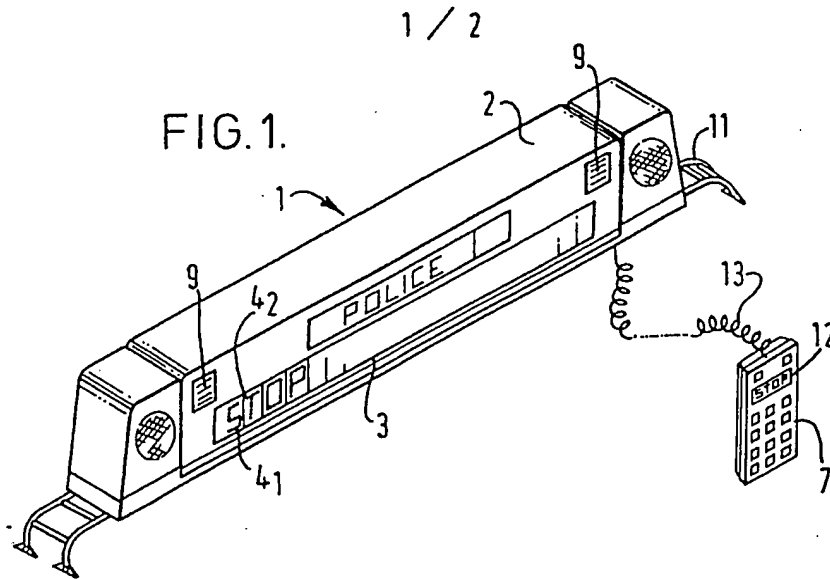
(54) A signalling system for a vehicle

(57) A signalling system for a vehicle, comprises: a first device (1) for mounting on or in a vehicle, the device including a plurality of light-emissive devices (4₁, 4₂ . . .); first means, for actuating selected ones of the light-emissive devices to display a message; and second means, for supplying the first means with control information to actuate such selected ones of the light-emissive devices in accordance with input information characteristic of the message to be displayed. The light emissive devices may be lamps or LEDs. The main microprocessor may include a PROM for storing a plurality of messages. A hand-held switchboard unit may be provided for manual selection.



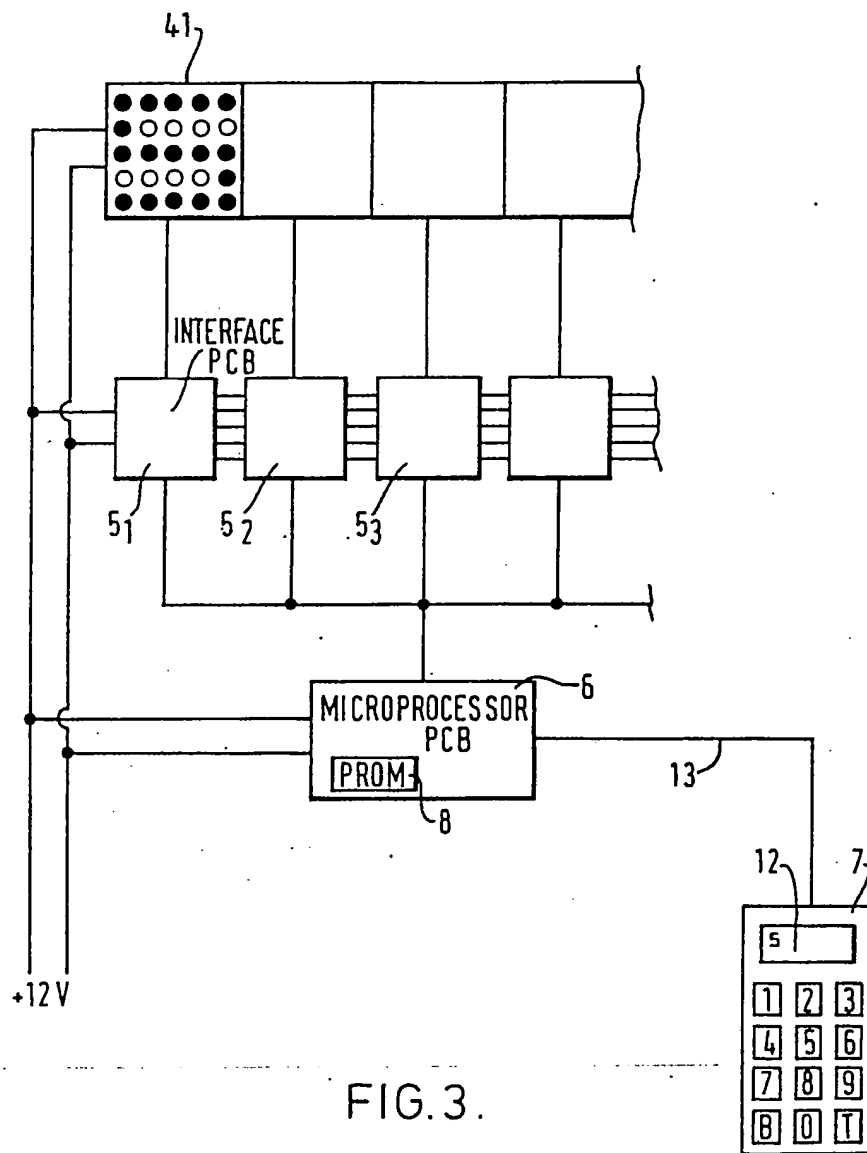
GB 2 175 428 A

2175428



Best Available Copy

2/2



SPECIFICATION

A signalling system for a vehicle

- 5 According to the present invention there is provided a signalling system for a vehicle, comprising: a first device for mounting on or in a vehicle, the device including a plurality of light-emissive devices; first means, for actuating selected ones of the light-emissive devices to display a message; and second means, for supplying the first means with control information to actuate such selected ones of the light-emissive devices in accordance with input information characteristic of the message to be displayed.

The said first device could be for mounting on the roof of a vehicle.

- 20 The said light-emissive devices could be incandescent lamps.

- The said light-emissive devices could comprise arrays of such devices, the devices of each array being selectively actuatable for displaying an alpha-numeric character. In this case, the said first means could comprise a respective interface circuit for each array.

- The said second means could comprise a microprocessor storing information for actuating selected ones of the light-emissive devices in dependence on different messages which may be displayed. In this case, the second means could further comprise a device (for example a push-button device), within or without the vehicle, for supplying the microprocessor with information characteristic of such different messages. Such a push-button device could be in the form of hand-held keyboard unit.

- 40 The present invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 shows a signalling unit for mounting on the roof of a vehicle, and its hand-held operating unit;

- 45 *Figure 2* shows the signalling unit on the roof of a vehicle; and

Figure 3 shows electronic circuitry of the signalling unit in block diagrammatic form for controlling the unit via the hand-held unit.

- 50 The system to be described includes two units, namely a 15 character signalling display unit for mounting on a vehicle roof and a remote hand-held keyboard control unit located within the vehicle.

- 55 a) *Display Unit*

- The display unit 1 comprises a housing 2 of polycarbonate type material which houses an aluminium lamp assembly panel 3. There are fifteen identical lamp arrays 4, to 4₁₅ attached to the panel 3, to provide for a fifteen character alpha-numeric display. Each array comprises a 5 row by 5 row matrix of 12 volt, 5 watt incandescent bulbs (25 lamps per character) retained by bayonet-type lamp holders

hardwired to respective ones of interface printed circuit boards 5₁ to 5₁₅, mounted at the bases of the arrays.

- 70 Each interface printed circuit board (PCB) will decode character select instructions received from a main microprocessor based printed circuit board 6, mounted adjacent the display panel 3 in the unit 1.

- 75 The main microprocessor printed circuit board 6 will process all instructions from a hand-held keyboard unit 7 and also contains a programmable read only memory (PROM) integrated circuit 8 which contains all the pre-defined messages to be displayed. The PROM 8 is mounted in a 'zero insertion force' (ZIF) connector, thus enabling future 'change of message' requirements to be carried out by simple and easy removal/replacement of the PROM.

- 85 A lamp diffuser panel, red in colour, masks all bulbs and printed circuit boards, and provision for fitment of loudspeakers 9 for audible signalling is made within the housing 2 (which additionally or alternatively may include searchlights). Additional warning lamps 10 may be incorporated at opposite ends of the display panel.

- The display unit 1 is powered from the vehicle's battery (heavy duty type) either by a permanently wired installation, or via a cigar lighter or similar device.

- 95 The display unit may be available in two versions, namely a permanently mounted unit attached to the vehicle roof or a removable unit attached to a 'clamp on' type roof-rack assembly 11 (see Fig. 1). Anti-vibration rubbers may be incorporated in both types of mounting arrangement.

- 105 b) *Keyboard Unit*

- The hand-held keyboard unit 7 has a liquid crystal display 12, providing verification of the main display message as displayed by the lamp arrays 4, to 4₁₅ and determined by the code for that message sent to the microprocessor board 6 by pressing a sequence of push-button switches of the unit 7. The keyboard unit 7 is connected to the display unit 1 by means of a telephone-type extending cable 13 fitted with a weatherproof connector assembly.

- 110 Ten of the push button switches are numbered 0 to 9 and allow selected ones of up to 100 different messages to be displayed. A printed message sheet defining each code and the related message may be attached to the rear of the keyboard unit.

- 120 A variable intensity switch for the lamps is incorporated into the keyboard unit 7 and also a switch for testing the lamps. Also, switches may be incorporated into the unit 7 for enabling the message to "roll" or flash/repeat.

- 125 The display unit 1 could alternatively be mounted on the boot or the rear parcel shelf of the vehicle for example.

130

Instead of being incandescent lamps, the light-emissive devices could be light-emissive diodes for example.

5 CLAIMS

1. A signalling system for a vehicle, comprising: a first device for mounting on or in a vehicle, the device including a plurality of light-emissive devices; first means, for actuating
10 selected ones of the light-emissive devices to display a message; and second means, for supplying the first means with control information to actuate such selected ones of the light-emissive devices in accordance with input
15 information characteristic of the message to be displayed.
2. A system according to claim 1, wherein the said first device is for mounting on the roof of a vehicle.
- 20 3. A system according to claim 1 or 2, wherein the said light-emissive devices are incandescent lamps.
4. A system according to any preceding claim, wherein the said light-emissive devices
25 comprise arrays of such devices, the devices of each array being selectively actuatable for displaying an alpha-numeric character.
5. A system according to claim 4, wherein the said first means comprises a respective
30 interface circuit for each array.
6. A system according to any preceding claim, wherein the said second means comprises a microprocessor storing information for actuating selected ones of the light-emissive
35 devices in dependence on different messages which may be displayed.
7. A system according to claim 6, wherein the second means further comprises a control device within or without the vehicle, for supplying the microprocessor with information
40 characteristic of such different messages.
8. A system according to claim 7, wherein the said control device comprises a push-button device.
- 45 9. A system according to claim 8, wherein the push-button device comprises a hand-held keyboard unit.
10. A signalling system for a vehicle, substantially as herein described with reference to
50 the accompanying drawings.

Printed in the United Kingdom for
Her Majesty's Stationery Office, Dd 8818935, 1986, 4235.
Published at The Patent Office, 25 Southampton Buildings,
London, WC2A 1AY, from which copies may be obtained.